

ABSTRACT OF THE DISCLOSURE

A sensor element of a NO_x sensor has a sensor cell for decomposing NO_x and residual O₂ admitted within the element and a monitor cell for decomposing only the residual O₂. The NO_x concentration is detected from a difference in an electric current output between the sensor cell and monitor cell. The tipping of the sensor element is protected by an element cover. The element cover has a plurality of side wall holes and at least one bottom wall hole. The side wall holes and bottom wall hole have diameters between 0.5 and 1.5 mm. A ratio of the diameter of the side wall holes to that of the bottom wall hole is between 0.5 and 1.5. This structure inhibits flow velocity variations within the element cover and output pulsation of the sensor cell and monitor cell, resulting in stabilizing the NO_x output.